

LPDES PERMIT NO. LA0112836, AI No. 83623

LPDES FACT SHEET AND RATIONALE  
FOR THE DRAFT MODIFIED LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

- I. **Company/Facility Name:** Acadia Power Partners, LLC  
Acadia Power Station  
30385 Crowley-Eunice Highway  
Eunice, LA 70535
- II. **Issuing Office:** Louisiana Department of Environmental Quality  
(LDEQ)  
Office of Environmental Services  
Post Office Box 4313  
Baton Rouge, Louisiana 70821-4313
- III. **Prepared By:** Kelli Hamilton  
Industrial Permits Section  
Water Permits Division  
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**Date Prepared:** July 30, 2009
- IV. **Permit Action/Status:**
  - A. **Reason For Permit Action:**

Modification of an existing Louisiana Pollutant Discharge Elimination System (LPDES) permit following regulations promulgated at LAC 33:IX.3105/40 CFR 124.5. In accordance with LAC 33:IX.3105.B.2, only those permit limitations and conditions pertaining to the draft modification(s) are open for public comment.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.2301.F, 4901, and 4903.
  - B. LPDES permit - LPDES permit effective date: 5/1/2006  
LPDES permit expiration date: 4/30/2011
  - C. Modification application received on July 1, 2009. Revoke and reissuance application received on June 20, 2008 with an addendum received on October 30, 2008, and additional addendum received on July 31, 2009.

Fact Sheet and Rationale for  
 Acadia Power Partners, LLC, Acadia Power Station  
 LA0112836, AI No. 83623  
 Page 2

V. Facility Information:

- A. Location - 30385 Crowley-Eunice Highway, Eunice, Acadia Parish  
 (Latitude 30°25'55", Longitude 92°24'40")
- B. Applicant Activity - According to the application, Acadia Power Partners, LLC, Acadia Power Station, is a steam electric generating facility.
- C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401-402, and 401, 405-415, and 417-471 have been adopted by reference at LAC 33:IX.4903)

Guideline

Steam Electric Power Generating

Reference

40 CFR 423

Other sources of technology based limits:

Best Professional Judgement

- D. Fee Rate -
1. Fee Rating Facility Type: major
  2. Complexity Type: IV
  3. Wastewater Type: III
  4. SIC code: 4911
- E. Continuous Facility Effluent Flow - 2.67 MGD.

VI. Receiving Waters: local drainage thence to Bayou Mallet

1. TSS (15%), mg/L: 30.6
2. Average Hardness, mg/L CaCO<sub>3</sub>: 95.1
3. Critical Flow, cfs: 0.1
4. Mixing Zone Fraction: 1
5. Harmonic Mean Flow, cfs: 1
6. River Basin: Mermentau, Segment No. 050103
7. Designated Uses:

The designated uses are primary contact recreation, secondary contact recreation, fish and wildlife propagation, and agriculture.

Information based on the following: LAC 33:IX Chapter 11; Recommendation(s) from Brian Baker to Melanie Connor on April 6, 2005.

Fact Sheet and Rationale for  
Acadia Power Partners, LLC, Acadia Power Station  
LA0112836, AI No. 83623  
Page 3

**VII. Nature of Modification:**

This Office received an application for revoke and reissuance on June 20, 2008. An addendum to the revoke and reissuance application was received on October 30, 2008. This application and associated addendum were rescinded and replaced by a modification request received on July 1, 2009. An additional addendum was received on July 31, 2009.

Permittee requested the following items to be modified in their existing permit:

- 1) Outfall 001 is to be relocated from Latitude 30 °25'36", Longitude 92°24'49" to Latitude 30°26'14", Longitude 92°24'38".

This Office concurs with this request and the new location for Outfall 001 shall be Latitude 30°26'14", Longitude 92°24'38".

- 2) Acadia Power requests that the Outfall 001 description be modified to read:

Outfall 001 is the discharge of cooling tower blowdown, process area and nonprocess area stormwater from the entire site, miscellaneous de minimis wastewaters (including, but not limited to, fire protection systems test water, hydrostatic test wastewater, air conditioner condensate, safety showers and eyewash stations water, equipment rinse water, and general facility wash water), and previously monitored wastestreams from Internal Outfalls 101 and 201.

This Office concurs with this request and will replace the existing Outfall 001 description with the requested description above.

- 3) Acadia Power requests that the Outfall 101 description be modified to read:

Internal Outfall 101 is the intermittent discharge of low volume wastewater sources such as RO-EDI reject, plant service water/plant drains, neutralized corrosive drains, combined HRSG blowdown, and other miscellaneous low volume wastewaters including, but not limited to, raw water pretreatment, excess condensate, steam condensate drains and steam drains tank, and analyzer slip streams.

This Office concurs with this request and will replace the existing Outfall 101 description with the requested description above.

Fact Sheet and Rationale for  
Acadia Power Partners, LLC, Acadia Power Station  
LA0112836, AI No. 83623  
Page 4

- 4) Acadia Power requests that the Outfall 201 description be modified to read:

Internal Outfall 201 is the intermittent discharge of green filter backwash. The discharge is primarily made into the Bayou Mallet Intake Reservoir; however, if necessary, it could be routed for discharge through Outfall 001.

This Office concurs with substance of this request and will change the Outfall 201 description as follows:

Internal Outfall 201, the intermittent discharge of green sand filter backwash. The discharge is primarily made into the Bayou Mallet Intake Reservoir; however, if necessary, it could be routed for discharge through Outfall 001.

- 5) Acadia Power requests that the Outfall 002 be deleted in concurrence with the relocation of Outfall 001. The former Outfall 002 drainage area is encompassed within the drainage area for Outfall 001.

This Office concurs with this request and will delete Outfall 002.

- 6) Acadia Power requests that the flow value of 2.67 MGD be used for Outfall 001. Acadia Power substantiates their request with Appendix A of the modification request demonstrating the reasoning for the revised flow rates.

This Office concurs with the request for utilization of 2.67 MGD as the flow value for Outfall 001.

- 7) Acadia Power requests the removal of the Total Cyanide limit established at Outfall 001 due to lack of detection since the effective date, May 1, 2006.

This Office concurs with this request and will remove the Total Cyanide monitoring requirement from Outfall 001.

- 8) Acadia Power requests a revision to the permit language concerning daily maximum and monthly average temperature limitations in accordance with the October 28, 2008, application addendum citing that the existing language is unclear in regards to determination of FWAT over a monthly interval. The permittee cites that the terms, "monthly average" and "maximum 30 day value" are creating confusion. The permittee also states that the existing language is also unclear as to whether or not the flow weighted average temperature (FWAT) can be used in conjunction with the daily maximum temperature limitation.

Fact Sheet and Rationale for  
 Acadia Power Partners, LLC, Acadia Power Station  
 LA0112836, AI No. 83623  
 Page 5

In order to clarify the permit requirements, the following temperature language will replace the existing temperature language in Part II, Paragraph Q:

TEMPERATURE

Daily temperature discharged is defined as the flow-weighted average (FWAT) and on a daily basis, shall be monitored and recorded in accordance with Part I of this permit. FWAT shall be calculated at equal time intervals not greater than two hours. The method of calculating FWAT is as follows:

$$FWAT = \frac{\text{SUMMATION (INSTANTANEOUS FLOW X INSTANTANEOUS TEMPERATURE)}}{\text{SUMMATION (INSTANTANEOUS FLOW)}}$$

"Daily Average Temperature" (also known as monthly average) shall be the arithmetic average of all FWATs calculated during the calendar month.

"Daily Maximum Temperature" (also known as daily maximum) shall be the highest FWAT calculated during the calendar month.

"Daily Average Temperature" in the language above is defined as the arithmetic average of all FWATs calculated during the calendar month regardless of the use of the terms "monthly average" or "maximum 30 day value." In addition, footnotes referencing this modified Part II language shall be placed by both the monthly average and daily maximum temperature limitations in Part I of the permit under Outfall 001.

- 9) Acadia Power requests the re-evaluation of the Total Sulfate limits established at Outfall 001 for the following reasons:
  - a) Utilization of harmonic mean flow in lieu of 7Q10 flow of the receiving water (unnamed ditch) for the purpose of calculation of water quality based limits for Total Sulfate in accordance with LAC33:IX.1115.C.8.
  - b) Use of the 250 mg/L sulfate standard for waterbodies not listed in Section 1123, Table 3, in lieu of the 30 mg/L established for Bayou Mallet which is listed in Section 1123, Table 3. The permittee states that Bayou Mallet is not listed in the §303(d) List as impaired for sulfate. Permittee goes on further to state that of forty ambient samples collected and analyzed for sulfate at ambient monitoring Site 649, located several miles downstream of the discharge, there were only two that exceeded the standard of 30 mg/L for Bayou Mallet. The permittee conducted sampling both immediately upstream and downstream of where the unnamed tributary enters Bayou Mallet. The facility is still examining ways to reduce and stabilize the level of sulfate in the effluent even though Bayou Mallet

Fact Sheet and Rationale for  
Acadia Power Partners, LLC, Acadia Power Station  
LA0112836, AI No. 83623  
Page 6

is maintaining compliance with the sulfate water quality standards. In consideration of utilizing the updated flow of 2.67 MGD and the applicable 250 mg/L sulfate standard, the facility requests that water quality based effluent limitations of 311 mg/L (monthly average) and 739 mg/L (daily maximum) be placed in the draft permit.

In response to the main issues brought up under item 9), this Office will use the harmonic mean for the purpose of calculation of water quality based limits for sulfates in accordance with LAC 33:IX.1115.C.8.

For waterbodies not specifically listed in LAC 33:IX.1123, Table 3, the standard of 250 mg/L for sulfates applies. In addition, this Office takes note that the discharge has a negligible impact on the receiving water body as evidenced by sampling data at Site #5, which is upstream of the discharge and Site #3, which is downstream of the discharge as demonstrated in the June 30, 2009, modification request. The upstream site averaged less than 5.21 mg/L of sulfate, and the downstream site (approximately 2 miles downstream of where the unnamed tributary conveying the facility's discharge enters Bayou Mallet) averaged less than 5.99 mg/L of sulfate which is also well below the 30 mg/L standard established for sulfate in Bayou Mallet.

After calculating the water quality based limit for sulfates in Appendix A of this fact sheet, this Office concurs that the permittee's requested limits of 311 mg/L, monthly average, and 739 mg/L daily maximum for sulfate should be placed in Outfall 001 of the draft modified permit. Concentration will be used in lieu of mass. See response to item 11).

- 10) Acadia Power requests that the Whole Effluent Toxicity (WET) dilution series be modified to reflect the increased flow from 31%, 41%, 54%, 72%, and 97% to a more stringent dilution series of 31%, 41%, 55%, 73%, and 98%. The facility is requesting only a change to dilution series of their WET requirements; no other changes.

This Office concurs with the facility's request and the changes will be reflected in the draft modified permit. The new dilution series is consistent with the dilution series calculations found at Appendix B.

- 11) Acadia Power requests concentration limitations only due to the variable nature of the discharges from Outfall 001 and in accordance with 40 CFR 423.15(m).

Fact Sheet and Rationale for  
Acadia Power Partners, LLC, Acadia Power Station  
LA0112836, AI No. 83623  
Page 7

This Office concurs with the permittee's request. In accordance with 40 CFR 423.15(m) and LAC 33:IX.2709.F.b, concentration limitations shall be maintained at Outfall 001, and the mass limitations shall be removed.

**VIII. Summary of Proposed Changes From the Current LPDES Permit::**

- A. Final Outfall 001 -
- 1) Final Outfall 001 has been relocated as specified in Item 1) under Section VII, Nature of Modification.
  - 2) Final Outfall 001's description has been changed as specified in Item 2) under Section VII, Nature of Modification.
  - 3) Final Outfall 001 flow has been changed as specified in Item 6) under Section VII, Nature of Modification.
  - 4) Final Outfall 001 Cyanide limitations have been deleted as specified in Item 7) under Section VII, Nature of Modification.
  - 5) Final Outfall 001 temperature language has been modified as specified in Item 8) under Section VII, Nature of Modification.
  - 6) Final Outfall 001 sulfate limitation has been modified as specified in Item 9) under Section VII, Nature of Modification.
  - 7) Final Outfall 001 Whole Effluent Toxicity (WET) dilution series has been modified as specified in Item 10) under Section VII, Nature of Modification.
  - 8) Final Outfall 001 mass limitations have been removed leaving concentration limitations in place as specified in Item 11) under Section VII, Nature of Modification.
  - 9) Internal Outfall 101 description has been modified as specified in Item 3) under Section VII, Nature of Modification.
  - 10) Internal Outfall 201 description has been modified as specified in Item 4) under Section VII, Nature of Modification.
  - 11) Outfall 002 has been deleted as specified in Item 5) under Section VII, Nature of Modification.

**IX. Proposed Permit Limits:**

The specific effluent limitations and/or conditions will be found in the draft permit modification. Development and calculation of permit limits are detailed in the discussion under Section VII, Nature of Modification.

Fact Sheet and Rationale for  
 Acadia Power Partners, LLC, Acadia Power Station  
 LA0112836, AI No. 83623  
 Page 8

X. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit modification. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit modification limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII. Regulations also require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(ii)].

Discussion of the calculation of technology and water quality based limits pertinent to this modification are discussed under Section VII, Nature of Permit Modification. The actual calculations are discussed under Section C. below.

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations and/or specific analytical results from the permittee's application were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, April 16, 2008.

In accordance with 40 CFR § 122.44 (d)(1)/LAC 33:IX.2707.D.1, the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, April 16, 2008, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion



Fact Sheet and Rationale for  
Acadia Power Partners, LLC, Acadia Power Station  
LA0112836, AI No. 83623  
Page 9

above any state water quality standard." Calculations, results, and documentation are given in Appendix A.

The following pollutants received modified water quality based effluent limits:

POLLUTANT(S)
Total Sulfate (as SO <sub>4</sub> )

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, April 16, 2008. They are also listed in Part II of the permit.

#### D. Biomonitoring Requirements

##### Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests as specified in Item 10) under Section VII, Nature of Modification. These additional effluent concentrations shall be 98%, 73%, 55%, 41%, and 31%. The low-flow effluent concentration (critical dilution) is defined as 98% effluent.

XI. Compliance History/DMR Review: A DMR review was conducted for June 2007 through May 2009. The following excursions were found:

DATE	PARAMETER	OUTFALL	REPORTED VALUE		PERMIT LIMITS	
			MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM
5/09	Total Sulfate, lbs/day	001	1836	1836	430	1021
5/09	Total Sulfate mg/L	001	123	123	28.10	66.90

#### XII. "IT" Questions - Applicant's Responses

The "IT" Questions along with the applicant's responses can be found in the Permit Application Addendum dated July 31, 2009. See Appendix C.

Fact Sheet and Rationale for  
Acadia Power Partners, LLC, Acadia Power Station  
LA0112836, AI No. 83623  
Page 10

#### **XIII. Endangered Species:**

The receiving waterbody, Subsegment 050103 of the Mermentau Basin is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated November 17, 2008 from Rieck (FWS) to Nolan (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. Therefore, the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat.

#### **XIV. Historic Sites:**

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

#### **XV. Tentative Determination:**

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to modify the permit for the discharge described in the application.

#### **XVI. Variances:**

No requests for variances have been received by this Office.

#### **XVII. Public Notices:**

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit modification and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List